Curriculum Vitae and Publication List of

Dr. Rüdiger Paschotta

RP Photonics Consulting GmbH	Tel.: +49 7726 389 22 60
Waldstr. 17	Fax: +49 7726 389 22 62
78073 Bad Dürrheim	E-mail: Paschotta@rp-photonics.com
Germany	Website: https://www.rp-photonics.com/

Personal Data

Born:	16 June 1965 in Tailfingen (Germany)
Citizenship:	German and Swiss
Marital status:	married

Education

09/71 to 06/84	Gymnasium Stockach (Germany), high school diploma 06/1984 (1.1, sehr gut, best of class)
09/86 to 12/91	Studies in physics, University of Konstanz (Germany), diploma in physics 12/1991 (sehr gut)

Research Experience

12/1990 - 12/1991	Diploma student, University of Konstanz, Germany, in the department of physics (Prof. Jürgen Mlynek)
	Topics: frequency doubling, generation of nonclassical light
01/1992 - 09/1994	Ph. D. student at the University of Konstanz (Germany), in the department of physics (Prof. Jürgen Mlynek)
	Topics: frequency doubling and parametric oscillation, generation of nonclassical light
	Ph.D. in 09/1994 with highest distinction (summa cum laude)
10/1994 - 01/1997	Research assistant in the Optoelectronics Research Centre, University of Southampton (England), with Prof. D.C. Hanna
	Topics: fiber lasers, upconversion lasers, laser spectroscopy, laser modeling, ultrashort pulse generation
02/1997 - 10/1997	Research assistant at the University of Paderborn (Germany)
	Topics: integrated optics, nonlinear optics, quasi phase matching

11/1997 - 06/2005	Senior research assistant (Oberassistent) in the Institute of Quantum Electronics, ETH Zürich (Switzerland), research group of Prof. Ursula Keller Topics: all-solid-state picosecond and femtosecond lasers, mode-locked high-power lasers, mode-locked semiconductor lasers (VECSELs), nonlinear wavelength conversion of ultrashort pulses, pulse compression, noise in optics (laser noise, timing jitter, noise in supercontinua), computer modeling in laser physics and nonlinear optics Habilitation in experimental physics: in October 2002.
06/2004 until now	Independent technical consulting via the company RP Photonics Consulting GmbH (https://www.rp-photonics.com/), full-time since 07/2005. The company was founded in Zürich, Switzerland, in 06/2004, and moved to Bad Dürrheim, Germany, in 12/2010.

Honors

1987 to 1991	Fellowship of the Studienstiftung des deutschen Volkes (German National Merit Foundation)
1992 to 1994	Ph. D. fellowship of the Studienstiftung des deutschen Volkes (German National Merit Foundation)
2002	Fresnel Prize of the European Physical Society (EPS) awarded for an "outstanding contributions to ultrafast all-solid-state lasers by pushing the frontiers in average power and pulse repetition rates by orders of magnitude"
2006	R. Paschotta was appointed a senior member of IEEE.
2006/2007	R. Paschotta became member of the Charles H. Townes award committee of the Optical Society of America, and later became the chair.
2009	R. Paschotta acted as the chair of the EPS award committee for the Fresnel Prize and the QEOD Thesis Prize.
2012	R. Paschotta became a fellow of the SPIE "for achievements in passively mode-locked lasers, including high-power lasers and high-repetition rates".
2016	R. Paschotta became a fellow of the Optical Society of America (OSA) "for the creation of an online encyclopedia on optics and photonics and for important contributions to the understanding and optimization of ultrafast lasers".

Core Competences

- deep and broad scientific and technical expertise in fields like laser physics, nonlinear optics, noise in optics, etc.
- highly developed analytic capabilities, used for problem assessment, structuring of information, comparison of options, etc.
- deep experience with physical modeling and computer programming
- organized style of working for highest efficiency and reliability

- strong motivation for hard work to reach highest standards
- broad interests and broad view
- cooperative style: enjoying fruitful team work, open communication, absolute reliability, motivating coworkers
- steady further improvement in all areas by permanent monitoring of results

Publications

Scientific Journals

1. P. Kürz, R. Paschotta, K. Fiedler, A. Sizmann, G. Leuchs, and J. Mlynek, "Squeezing by second-harmonic generation in a monolithic resonator", Appl. Phys. B **55**, 216 (1992).
2. K. Fiedler, S. Schiller, R. Paschotta, P. Kürz, and J. Mlynek, "Highly efficient frequency doubling with a doubly-resonant monolithic total internal reflection ring resonator", Opt. Lett. **18** (21), 1786 (1993).
3. J. G. Rarity, J. Burnett, P. R. Tapster, and R. Paschotta, "High-visibility two-photon interference an a single-mode-fibre interferometer", Europhys. Lett. **22**, 95 (1993).
4. R. Paschotta, K. Fiedler, P. Kürz, and J. Mlynek, "Nonlinear mode coupling in doubly-resonant frequency doublers", Appl. Phys. B **58**, 117 (1994).
5. P. Kürz, R. Paschotta, K. Fiedler, and J. Mlynek, "Bright squeezed light by second-harmonic generation in a monolithic resonator", Europhys. Lett. **24**, 449 (1993).
6. R. Paschotta and J. Mertz, "Squeezed light generation by twin beam control with optical cavity", Phys. Rev. A **49** (4), 2820 (1994).
7. R. Paschotta, M. Collett, P. Kürz, K. Fiedler, H. A. Bachor, and J. Mlynek, "Bright squeezed light from a singly-resonant frequency doubler", Phys. Rev. Lett. **72** (24), 3807 (1994).
8. R. Paschotta, P. Kürz, R. Henking, S. Schiller, and J. Mlynek, "82% efficient continuous-wave frequency doubling of 1.06 µm with a monolithic MgO:$LiNbO_3$ resonator", Opt. Lett. **19** (17), 1325 (1994).
9. S. Schiller, S. Kohler, R. Paschotta, and J. Mlynek, "Squeezing and quantum nondemolition measurements with an optical parametric amplifier", Appl. Phys. B **60**, 77 (1995).
10. S. Schiller, G. Breitenbach, S. F. Pereira, R. Paschotta, A. G. White, and J. Mlynek, "Generation of continuous-wave bright squeezed light", in "Laser Frequency Stabilization and Noise Reduction", Y. Shevy, Ed., Proc. SPIE 2378 (1995).
11. P. R. Barber, R. Paschotta, A. C. Tropper, and D. C. Hanna, "IR-induced photodarkening in Tm-doped fluoride fibres", Opt. Lett. **20** (21), 2195 (1995).
12. R. Paschotta, D. J. B. Brinck, S. G. Farwell, and D. C. Hanna, "Resonant loop mirror with narrow-band reflections and its application in single-frequency fibre lasers", Appl. Opt. **36** (3), 593 (1997).
13. S. Schiller, G. Breitenbach, R. Paschotta, and J. Mlynek, "Subharmonic pumped continuous-wave parametric oscillator", Appl. Phys. Lett. **68** (24), 3374 (1996).
14. R. Paschotta, J. Nilsson, P. R. Barber, J. E. Caplen, A. C. Tropper, and D. C. Hanna, "Lifetime quenching in Yb-doped fibres", Opt. Commun. **136**, 375 (1997).
15. R. Paschotta, D.C. Hanna, P. DeNatale, G. Modugno, M. Inguscio, and P. Laporta, "Power amplifier for 1083 nm using ytterbium doped fibre", Opt. Commun. **136**, 243 (1997).

16. R. Paschotta, P. R. Barber, A. C. Tropper, and D. C. Hanna, "Characterization and modeling of thulium:ZBLAN blue upconversion fiber lasers", J. Opt. Soc. Am. B **14** (5), 1213 (1997).
17. R. Paschotta, J. Nilsson, L. Reekie, A. C. Tropper, and D. C. Hanna, "Single-frequency ytterbium-doped fiber laser stabilized by spatial hole burning", Opt. Lett. **22** (1), 40 (1997).
18. R. Paschotta, J. Nilsson, A. C. Tropper, and D. C. Hanna, "Ytterbium-doped fiber amplifiers", IEEE J. Quantum Electron. **33** (7), 1049 (1997).
19. V. Cautaerts, D. J. Richardson, R. Paschotta, and D. C. Hanna, "Stretched pulse Yb^{3+}:silica fiber laser", Opt. Lett. **22** (5), 316 (1997).
20. J. Nilsson, R. Paschotta, J. E. Caplen, and D. C. Hanna, "Yb^{3+}-ring-doped fiber for high-energy pulse amplification", Opt. Lett. **22** (14), 1092 (1997).
21. R. Paschotta, J. Nilsson, A. C. Tropper, and D. C. Hanna, "Efficient superfluorescent light sources with broad bandwidth", IEEE J. Sel. Topics on Quantum Electron. **3** (4), 1097 (1997).
22. R. Paschotta, N. Moore, W. A. Clarkson, A. C. Tropper, and D. C. Hanna, "230 mW of blue light from a Tm-doped upconversion fibre laser", IEEE J. Sel. Topics on Quantum Electron. **3** (4), 1100 (1997) (**invited**).
23. J. Nilsson, J. D. Minelly, R. Paschotta, A. C. Tropper, and D. C. Hanna, "Ring-doped cladding-pumped single-mode three-level fiber laser", Opt. Lett. **23** (5), 355 (1998).
24. B. Luo, U. Elman, S. Kröll, R. Paschotta, and A. C. Tropper, "Amplification of photon echo signals using a fibre amplifier", Opt. Lett. **23** (6), 442 (1998).
25. M. Flörsheimer, R. Paschotta, U. Kubitscheck, Ch. Brillert, D. Hofmann, L. Heuer, G. Schreiber, C. Verbeek, W. Sohler, H. Fuchs, "Second-harmonic imaging of ferroelectric domains in $LiNbO_3$ with micron resolution in lateral and axial direction", Appl. Phys. B **67** (5), 593 (1998).
26. R. Fluck, R. Häring, R. Paschotta, E. Gini, H. Melchior, and U. Keller, "Eyesafe pulsed microchip laser using semiconductor saturable absorber mirrors", Appl. Phys. Lett. **72** (25), 3273 (1998).
27. G. J. Spühler, R. Paschotta, R. Fluck, B. Braun, M. Moser, G. Zhang, E. Gini, and U. Keller, "Experimentally confirmed design guidelines for passively Q-switched microchip lasers using semiconductor saturable absorbers", J. Opt. Soc. Am. B **16** (3), 376 (1999).
28. C. Hönninger, R. Paschotta, F. Morier-Genoud, M. Moser, and U. Keller, "Q-switching stability limits of cw passive mode locking", J. Opt. Soc. Am. B **16** (1), 46 (1999).
29. R. Paschotta, R. Häring, E. Gini, H. Melchior, U. Keller, H. L. Offerhaus, and D. J. Richardson, "Passively Q-switched 0.1 mJ fiber laser system at 1.53 μm", Opt. Lett. **24** (6), 388 (1999).
30. G. J. Spühler, R. Paschotta, U. Keller, M. Moser, M. J. P. Dymott, D. Kopf, J. Meier, K. J. Weingarten, J. D. Kmetec, J. Alexander, and G. Truong, "Diode-pumped passively mode-locked Nd:YAG laser with 10 W average power in diffraction-limited beam", Opt. Lett. **24** (8), 528 (1999).
31. C. Hönninger, R. Paschotta, M. Graf, F. Morier-Genoud, G. Zhang, M. Moser, S. Biswal, A. Braun, G. A. Mourou, I. Johannsen, A. Giesen, W. Seeber, and U. Keller, "Ultrafast ytterbium-doped bulk lasers and laser amplifiers", Appl. Phys. B **69** (1), 3 (1999) (**invited**)
32. R. Paschotta, C. Hönninger, J. Aus der Au, G. Spühler, D. H. Sutter, N. Matuschek, F. H. Lösel, F. Morier-Genoud, U. Keller, M. Moser, R. Hövel, V. Scheuer, G. Angelow, T. Tschudi, M. J. P. Dymott, D. Kopf, J. Meyer, K. J. Weingarten, J. D. Kmetec, J. Alexander,

and G. Truong, “Progress on all-solid-state passively mode-locked ps and fs lasers”, Proc. SPIE 3616, 2 (1999) (**invited**).

33. R. Paschotta, G. J. Spühler, D. H. Sutter, N. Matuschek, U. Keller, M. Moser, R. Hövel, V. Scheuer, G. Angelow, and T. Tschudi, “Double-chirped semiconductor mirror for dispersion compensation in femtosecond lasers”, Appl. Phys. Lett. **75** (15), 2166 (1999).
34. R. Paschotta, J. Aus der Au, and U. Keller, “Strongly enhanced negative dispersion from thermal lensing or other focusing effects in femtosecond lasers cavities”, J. Opt. Soc. Am. B **17** (4), 646 (2000).
35. L. Krainer, R. Paschotta, and U. Keller, “Passively mode-locked Nd:YVO_4 laser with 13 GHz repetition rate”, Appl. Phys. B **69** (3), 245 (1999).
36. L. Krainer, R. Paschotta, and U. Keller, “29-GHz mode-locked miniature Nd:YVO_4 laser”, Electron. Lett. **35** (14), 1160 (1999).
37. J. Aus der Au, S. F. Schaer, R. Paschotta, C. Hönninger, M. Moser, and U. Keller, “High-power diode-pumped passively mode-locked Yb:YAG lasers”, Opt. Lett. **24** (18), 1281 (1999).
38. R. Paschotta, J. Aus der Au, G. J. Spühler, F. Morier-Genoud, M. Moser, and U. Keller, “Diode-pumped passively mode-locked lasers with high average power”, Appl. Phys. B **70**, S25 (2000).
39. S. Hoogland, S. Dhanjal, A. C. Tropper, J. S. Roberts, R. Häring, R. Paschotta, F. Morier-Genoud, and U. Keller, “Passively mode-locked diode-pumped surface-emitting semiconductor laser”, IEEE J. Photon. Technol. Lett. **12** (9), 1135 (2000).
40. R. Paschotta, J. Aus der Au, and U. Keller, “Thermal effects in high power end-pumped lasers with elliptical mode geometry”, J. Sel. Topics on Quantum Electron. **6** (4), 636 (2000).
41. G. J. Spühler, R. Paschotta, M. P. Kullberg, M. Graf, M. Moser, E. Mix, G. Huber, C. Harder, and U. Keller, „A passively Q-switched Yb:YAG microchip laser”, Appl. Phys. B **72** (3), 285 (2001).
42. J. Aus der Au, G. J. Spühler, T. Südmeyer, R. Paschotta, R. Hövel, M. Moser, S. Erhard, M. Karszewski, A. Giesen, and U. Keller, “16.2 W average power from a diode-pumped femtosecond Yb:YAG thin disk laser”, Opt. Lett. **25** (11), 859 (2000).
43. F. Brunner, G. J. Spühler, J. Aus der Au, L. Krainer, F. Morier-Genoud, R. Paschotta, N. Lichtenstein, S. Weiss, C. Harder, A. A. Lagatsky, A. Abdolvand, N. V. Kuleshov, and U. Keller, “Diode-pumped femtosecond Yb:$KGd(WO_4)_2$ laser with 1.1-W average power”, Opt. Lett. **25** (15), 1119 (2000).
44. G. J. Spühler, T. Südmeyer, R. Paschotta, M. Moser, K. J. Weingarten, and U. Keller, “Passively mode-locked high-power Nd:YAG lasers with multiple laser heads”, Appl. Phys. B **71** (1), 19 (2000).
45. L. Krainer, R. Paschotta, M. Moser, and U. Keller, “Passively mode-locked picosecond lasers with up to 59 GHz repetition rate”, Appl. Phys. Lett. **77** (14), 2104 (2000).
46. L. Krainer, R. Paschotta, M. Moser, and U. Keller, “77 GHz soliton modelocked Nd:YVO_4 laser”, Electron. Lett. **36** (22), 1846 (2000).
47. R. Paschotta, J. Aus der Au, G. J. Spühler, S. Erhard, A. Giesen, and U. Keller, “Passive mode locking of thin disk lasers: effects of spatial hole burning”, Appl. Phys. B **72** (3), 267 (2001).
48. F. Brunner, R. Paschotta, J. Aus der Au, G. J. Spühler, F. Mourier-Genoud, R. Hövel, M. Moser, S. Erhard, M. Karszewski, A. Giesen, and U. Keller, “Widely tunable pulse durations from a passively mode-locked thin disk Yb:YAG laser”, Opt. Lett. **26** (6), 379 (2001).

49. T. Südmeyer, J. Aus der Au, R. Paschotta, U. Keller, P. G. R. Smith, G. W. Ross, and D. C. Hanna, "Femtosecond fiber-feedback OPO", Opt. Lett. **26** (5), 304 (2001).

50. R. Häring, R. Paschotta, R. Fluck, E. Gini, H. Melchior, and U. Keller, "Passively Q-switched microchip laser at 1.5 μm", J. Opt. Soc. Am. B **18** (12), 1805 (2001).

51. T. Südmeyer, J. Aus der Au, R. Paschotta, U. Keller, P. G. R. Smith, G. W. Ross, and D. C. Hanna, "Novel ultrafast parametric systems: high repetition rate single-pass OPG and fiber-feedback OPO", J. Phys. D: Appl. Phys. **34** (16), 2433 (2001).

52. R. Häring, R. Paschotta, E. Gini, F. Morier-Genoud, H. Melchior, D. Martin, and U. Keller, "Picosecond surface-emitting semiconductor laser with > 200 mW average power", Electron. Lett. **37** (12), 766 (2001).

53. R. Paschotta and U. Keller, "Passive mode locking with slow saturable absorbers", Appl. Phys. B **73** (7), 653 (2001).

54. L. Lefort, J. H. V. Price, D. J. Richardson, G. J. Spühler, R. Paschotta, U. Keller, A. Fry, and J. Weston, "Practical low-noise stretched-pulse Yb^{3+} doped fiber laser", Opt. Lett. **27** (5), 291 (2002).

55. L. Krainer, R. Paschotta, G. J. Spühler, I. Klimov, C. Y. Teisset, K. J. Weingarten, and U. Keller, "Tunable picosecond pulse-generating laser with a repetition rate exceeding 10 GHz", Electron. Lett. **38** (5), 225 (2002).

56. R. Häring, R. Paschotta, A. Aschwanden, E. Gini, F. Morier-Genoud, and U. Keller, "High-power passively mode-locked semiconductor lasers", IEEE J. Quantum Electron. **38** (9), 1268 (2002).

57. L. Krainer, R. Paschotta, S. Lecomte, M. Moser, K. J. Weingarten, and U. Keller, "Compact Nd:YVO_4 lasers with pulse repetition rates up to 160 GHz", IEEE J. Quantum Electron. **38** (10), 1331 (2002).

58. R. Paschotta, R. Häring, A. Garnache, S. Hoogland, A. C. Tropper, and U. Keller, "Soliton-like pulse shaping mechanism in passively mode-locked surface-emitting semiconductor lasers", Appl. Phys. B **75**, 445 (2002).

59. F. Brunner, T. Südmeyer, E. Innerhofer, F. Morier-Genoud, R. Paschotta, V. E. Kisel, V. G. Shcherbitsky, N. V. Kuleshov, J. Gao, K. Contag, A. Giesen, and U. Keller, "240-fs pulses with 22-W average power from a passively mode-locked thin-disk Yb:$KY(WO_4)_2$ laser", Opt. Lett. **27** (13), 1162 (2002).

60. S. Lecomte, L. Krainer, R. Paschotta, M. J. P. Dymott, K. Weingarten, and U. Keller, "Optical parametric oscillator with a 10-GHz repetition rate and 100-mW average output power in the spectral region near 1.5 μm", Opt. Lett. **27** (19), 1714 (2002).

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64. G. J. Spühler, P. S. Golding, L. Krainer, I. J. Kilburn, P. A. Crosby, M. Brownell, K. J. Weingarten, R. Paschotta, M. Haiml, R. Grange, and U. Keller, "Multi-wavelength source with 25-GHz channel spacing tunable over the C-band", Electron. Lett. **39** (10), 778 (2003).

65. S. C. Zeller, L. Krainer, G. J. Spühler, K. J. Weingarten, R. Paschotta, and U. Keller, "Passively mode-locked 40-GHz Er:Yb:glass laser", Appl. Phys. B **76**, 787 (2003).

66. S. Hoogland, A. Garnache, I. Sagnes, B. Paldus, K. J. Weingarten, R. Grange, M. Haiml, R. Paschotta, U. Keller, and A. C. Tropper, "Picosecond pulse generation with a 1.5-µm passively mode-locked surface-emitting semiconductor laser", Electron Lett. **39** (11), 846 (2003).

67. T. Südmeyer, F. Brunner, E. Innerhofer, R. Paschotta, K. Furusawa, J. C. Baggett, T. M. Monro, D. J. Richardson, and U. Keller, "Nonlinear femtosecond pulse compression at high average power levels using a large mode area holey fiber", Opt. Lett. **28** (20), 1951 (2003).

68. G. Arisholm, T. Südmeyer, and R. Paschotta, "Limits to the power scalability of high-gain optical parametric oscillators and amplifiers", J. Opt. Soc. Am. B **21** (3), 578 (2004).

69. L. Schares, R. Paschotta, L. Occhi, and G. Guekos, "40-GHz mode-locked fiber ring laser using a Mach-Zehnder interferometer with integrated SOAs", IEEE J. Lightwave Technol. **22** (3), 859 (2004).

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71. T. Südmeyer, E. Innerhofer, F. Brunner, R. Paschotta, T. Usami, H. Ito, S. Kurimura, K. Kitamura, D. C. Hanna, and U. Keller, "High power femtosecond fiber-feedback OPO based on periodically poled stoichiometric $LiTaO_3$", Opt. Lett. **29** (10), 1111 (2004).

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76. F. Brunner, E. Innerhofer, S. V. Marchese, T. Südmeyer, R. Paschotta, T. Usami, H. Ito, and U. Keller, "Powerful RGB laser source pumped with a mode-locked thin disk laser", Opt. Lett. **29** (16), 1921 (2004).

77. S. C. Zeller, L. Krainer, G. J. Spühler, R. Paschotta, M. Golling, D. Ebling, K. J. Weingarten, and U. Keller, "Passively mode-locked 50-GHz Er:Yb:glass laser", Electron. Lett. **40** (14), 875 (2004).

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81. D. Lorenser, H. J. Unold, D. J. H. C. Maas, A. Aschwanden, R. Grange, R. Paschotta, D. Ebling, E. Gini, and U. Keller, "Towards wafer-scale integration of high repetition rate passively mode-locked surface-emitting semiconductor lasers", Appl. Phys. B **79**, 927 (2004).

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(also appeared in the Virtual Journal of Ultrafast Science, April 2005).

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85. S. Lecomte, R. Paschotta, S. Pawlik, B. Schmidt, K. Furusawa, A. Malinowski, D. J. Richardson, and U. Keller, "Optical parametric oscillator with a pulse repetition rate of 39 GHz and 2.1-W signal average output power in the 1.5-μm spectral region", Opt. Lett. **30** (3), 290 (2005).

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76. S. Lecomte, R. Paschotta, L. Krainer, K. J. Weingarten, and U. Keller, "Tunable optical parametric oscillator generating picosecond pulses around 1.55 µm with 10-GHz repetition rate", Conference on Lasers and Electro-Optics 2003, Baltimore (Maryland), June 2003, session CMA.
77. L. Krainer, G. J. Spühler, I. J. Kilburn, P. S. Golding, P. A. Crosby, M. Brownell, and K. J. Weingarten, R. Paschotta, and U. Keller, "C-band tunable 25-GHz passively mode-locked Er:Yb:glass laser", Conference on Lasers and Electro-Optics 2003, Baltimore (Maryland), June 2003, session CWM.
78. D. Lorenser, A. Aschwanden, R. Häring, R. Paschotta, E. Gini, and U. Keller, "Mode-locked high-power surface-emitting semiconductor laser", Conference on Lasers and Electro-Optics 2003, Baltimore (Maryland), June 2003, session CThC.
79. S. Hoogland, A. C. Tropper, A. Garnache, I. Sagnes, B. Paldus, K. J. Weingarten, R. Grange, M. Haiml, R. Paschotta, and U. Keller, "Picosecond operation of a 1.5-µm passively mode-locked surface-emitting laser", Conference on Lasers and Electro-Optics 2003, Baltimore (Maryland), June 2003, session CThC.
80. A. Aschwanden, D. Lorenser, R. Häring, R. Paschotta, E. Gini, and U. Keller, "Mode-locked high-power surface-emitting semiconductor lasers", CLEO/Europe 2003 in Munich, talk CC1-1-MON, June 2003 (**invited**).
81. R. Paschotta, R. Häring, U. Keller, A. Garnache, S. Hoogland, and A. C. Tropper, "Soliton-liked pulse shaping mechanism in passively mode-locked surface-emitting semiconductor lasers", CLEO/Europe 2003 in Munich, talk CC1-2-MON, June 2003.
82. T. Südmeyer, F. Brunner, E. Innerhofer, R. Paschotta, U. Keller, T. Usami, H. Ito, M. Nakamura, K. Kitamura, K. Furusawa, J. C. Baggett, T. M. Monro, and D. J. Richardson, "High-power femtosecond nonlinear devices pumped with a mode-locked thin disk laser", CLEO/Europe 2003 in Munich, talk CE3-1-TUE, June 2003 (**invited**).
83. R. Paschotta, S. Lecomte, U. Keller, L. Krainer, G. J. Spühler, and K. J. Weingarten, "Picosecond pulse sources in the 1.5-µm region with multi-GHz repetition rates", CLEO/Europe 2003 in Munich, talk CJ4-3-TUE, June 2003.
84. G. Arisholm, T. Südmeyer, and R. Paschotta, "Limits to the power scalability of high-gain optical parametric oscillators and amplifiers", CLEO/Europe 2003 in Munich, poster CE2M, June 2003.
85. F. Brunner, T. Südmeyer, E. Innerhofer, R. Paschotta, and U. Keller, "Passively mode-locked high-power lasers and femtosecond high-power nonlinear frequency conversion", Laser Optics '03 in St. Petersburg, June 2003 (**invited**).
86. F. Brunner, T. Südmeyer, E. Innerhofer, R. Paschotta, and U. Keller, "Nonlinear femtosecond pulse compression at high average power levels using a large mode area holey fiber", LOYS 2003 in St. Petersburg, June 2003 (won the "**best paper award**").
87. U. Keller, S. C. Zeller, S. Lecomte, R. Paschotta, L. Krainer, G. J. Spühler, and K. J. Weingarten, "Novel 10 and 40 GHz telecom pulse generating sources with high average power", Ultrafast Optics Conference, Vienna, June-July 2003 (**invited**).

88. R. Paschotta, T. Südmeyer, F. Brunner, E. Innerhofer, and U. Keller, “Mode-locked high-power lasers and nonlinear optics - a powerful combination”, LPHYS 2003 in Hamburg, August 2003 (**invited**).
89. R. Paschotta, A. Aschwanden, D. Lorenser, E. Gini, and U. Keller, “High power passively mode-locked semiconductor lasers”, OSA Annual Meeting “2003 Frontiers in Optics”, Tucson, Arizona, Oct. 2003, talk ThEE1 (**invited**).
90. R. Paschotta, S. C. Zeller, S. Lecomte, U. Keller, L. Krainer, G. J. Spühler, and K. J. Weingarten, “Pulse generating lasers for telecom applications”, OSA Annual Meeting “2003 Frontiers in Optics”, Tucson, Arizona, Oct. 2003, talk WJJ3 (**invited**).
91. F. Brunner, E. Innerhofer, T. Südmeyer, S. V. Marchese, R. Paschotta, U. Keller, T. Usami, H. Ito, S. Kurimura, and K. Kitamura, “Two-stage optical parametric generator with multi-watt outputs in ultrashort pulses around 800 nm and 1450 nm”, Advanced Solid-State Photonics (ASSP '04), Santa Fe (New Mexico), 2004, talk TuC1.
92. A. Schlatter, S. C. Zeller, R. Grange, R. Paschotta, and U. Keller, “Pulse energy dynamics of passively mode-locked lasers above the Q-switching threshold”, Advanced Solid-State Photonics (ASSP '04), Santa Fe (New Mexico), 2004, poster TuB18.
93. E. Innerhofer, F. Brunner, T. Südmeyer, S. V. Marchese, R. Paschotta, U. Keller, T. Usami, H. Ito, S. Kurimura, and K. Kitamura, “Powerful RGB laser source for projection displays based on a passively mode-locked thin disk laser”, Conference on Lasers and Electro-Optics 2004, San Francisco (California), May 2004, talk CMU1 (**invited**).
94. G. J. Spühler, L. Krainer, R. Paschotta, U. Keller, and K. J. Weingarten, “Soliton mode-locked femtosecond Er:Yb:glass laser”, Conference on Lasers and Electro-Optics 2004, San Francisco (California), May 2004, talk CTuL2.
95. A. Aschwanden, D. Lorenser, R. Paschotta, U. Keller, and E. Gini, “Passively mode-locked surface-emitting semiconductor laser with 1.7 W output power in 5.9-ps pulses”, Conference on Lasers and Electro-Optics 2004, San Francisco (California), May 2004, talk CTuY4.
96. D. Nodop, L. Krainer, G. J. Spühler, S. Lecomte, M. Golling, R. Paschotta, U. Keller, D. Ebling, T. Ohgoh, T. Hayakawa, and K. J. Weingarten, “Compact 10-GHz Nd:$GdVO_4$ laser with 0.5 W average output power and 125 fs rms timing jitter”, Conference on Lasers and Electro-Optics 2004, San Francisco (California), May 2004, talk CTuCC5.
97. S. Lecomte, R. Paschotta, M. Golling, U. Keller, D. Ebeling, T. Ohgoh, and T. Hayakawa, “Diode-pumped 40-GHz passively mode-locked Nd:YVO_4 laser with 288-mW average output power”, Conference on Lasers and Electro-Optics 2004, San Francisco (California), May 2004, talk CWF1.
98. A. Aschwanden, D. Lorenser, H. J. Unold, R. Paschotta, U. Keller, and E. Gini, “10-GHz passively mode-locked surface-emitting semiconductor laser with 1.4 W output power”, Conference on Lasers and Electro-Optics 2004, San Francisco (California), May 2004, **post-deadline talk** CPDB8.
99. S. C. Zeller, L. Krainer, G. J. Spühler, R. Paschotta, M. Golling, U. Keller, D. Ebling, and K. J. Weingarten, „Passively mode-locked 50-GHz Er:Yb:glass laser“, Conference on Lasers and Electro-Optics 2004, San Francisco (California), May 2004, talk CFC1.
100. S.V. Marchese, E. Innerhofer, F. Brunner, T. Südmeyer, R. Paschotta, U. Keller, T. Usami, H. Ito, M. Nakamura, and K. Kitamura, “Powerful RGB laser source based on a passively mode-locked thin-disk laser”, EPS-QEOD Europhoton Conference on “Solid-State and Fiber Coherent Light Sources”, Aug./Sept. 2004, talk TuD2.

101. R. Paschotta, “Numerical simulation of the timing jitter of passively mode-locked lasers”, EPS-QEOD Europhoton Conference on “Solid-State and Fiber Coherent Light Sources”, Aug./Sept. 2004, talk WeD3.
102. D. Lorenser, A. Aschwanden, R. Paschotta, E. Gini, and U. Keller, “Passively mode-locked surface-emitting semiconductor laser with up to 1.9 W average output power”, EPS-QEOD Europhoton Conference on “Solid-State and Fiber Coherent Light Sources”, Aug./Sept. 2004, talk ThB2.
103. V.E. Kisel, A.E. Troshin, V.G. Shcherbitsky, N.V. Kuleshov, V.N. Matrosov, T.A. Matrosova, M.I. Kupchenko, F. Brunner, R. Paschotta, F. Morier-Genoud, and U. Keller, “Laser performance of Yb^{3+}:YVO_4 crystal”, EPS-QEOD Europhoton Conference on “Solid-State and Fiber Coherent Light Sources”, Aug./Sept. 2004, **post-deadline talk** PD2.
104. E. Benkler, N. Haverkamp, L. Krainer, G. J. Spühler, K. J. Weingarten, R. Paschotta, U. Keller, and H. R. Telle, “Characterization of telecommunication laser pulses using an ultrafast optical sampling oscilloscope”, 29th European Conference on Optical Communication (ECOC ’04), Stockholm, Sweden, Sept. 5-9, 2004.
105. C. Erny, G. J. Spühler, L. Krainer, R. Paschotta, K. J. Weingarten, and U. Keller, “Picosecond pulse-generating laser with turn-key repetition rate tuning from 8.8 to 13.3 GHz”, 29th European Conference on Optical Communication (ECOC ’04), Stockholm, Sweden, Sept. 5-9, 2004, talk Th3.4.2.
106. S. C. Zeller, L. Krainer, G. J. Spühler, R. Paschotta, M. Golling, D. Ebling, K. J. Weingarten, and U. Keller, “Passively mode-locked 50-GHz Er:Yb:glass laser”, 29th European Conference on Optical Communication (ECOC ’04), Stockholm, Sweden, Sept. 5-9, 2004, talk Th3.4.3.
107. E. Innerhofer, F. Brunner, S. V. Marchese, R. Paschotta, U. Keller, K. Furusawa, J. C. Baggett, T. M. Monro, and D. J. Richardson, “32 W of average power in 24-fs pulses from a passively mode-locked thin disk laser with nonlinear fiber compression”, Advanced Solid-State Photonics (ASSP '05), Vienna (Austria), 2005, talk TuA3
(won the “Best Student Paper Prize”).
108. S. Lecomte, R. Paschotta, U. Keller, S. Pawlik, B. Schmidt, K. Furusawa, A. Malinowski, and D. J. Richardson, “Broadly tunable optical parametric oscillators with up to 82-GHz pulse repetition rate and very high output power”, Advanced Solid-State Photonics (ASSP '05), Vienna (Austria), 2005, talk TuA5.
109. R. Paschotta, B. Rudin, A. Schlatter, S. C. Zeller, G. J. Spühler, L. Krainer, U. Keller, N. Haverkamp, and H. R. Telle, “Novel technique for high sensitive timing jitter measurements”, Advanced Solid-State Photonics (ASSP '05), Vienna (Austria), 2005, talk TuB3.
110. V. E. Kisel, A. E. Troshin, N. A. Tolstik, V. G. Shcherbitsky, N. V. Kuleshov, V. N. Matrosov, T. A. Matrosova, M. I. Kupchenko, F. Brunner, R. Paschotta, F. Morier-Genoud, and U. Keller, “Continuous-wave, Q-switched and mode-locked laser operation of Yb^{3+}-doped YVO_4 single crystal”, Advanced Solid-State Photonics (ASSP '05), Vienna (Austria), 2005, poster TuB37.
111. D. Lorenser, A. Aschwanden, H. J. Unold, D. J. Maas, R. Paschotta, U. Keller, E. Gini, and D. Ebling, “Passively mode-locked surface-emitting semiconductor lasers with high repetition rates of up to 30GHz”, Advanced Solid-State Photonics (ASSP '05), Vienna (Austria), 2005, talk WC4.
112. R. Paschotta, B. Schenkel, and U. Keller, “Femtosecond pulse compression of supercontinuum generated in a microstructure fiber”, Advanced Solid-State Photonics (ASSP '05), Vienna (Austria), 2005, talk WD3.

113. S. Lecomte, R. Paschotta, U. Keller, S. Pawlik, B. Schmidt, K. Furusawa, A. Malinowski, and D. J. Richardson, “Broadly tunable optical parametric oscillators with up to 82-GHz pulse repetition rate and very high output power”, Conference on Optical Fiber Communications (OFC) 2005, Anaheim (CA), talk OFE 5.
114. R. Paschotta, B. Rudin, A. Schlatter, S. C. Zeller, G. J. Spühler, L. Krainer, U. Keller, N. Haverkamp, and H. R. Telle, “Nearly quantum-limited timing jitter of passively mode-locked 10-GHz diode-pumped Er:Yb:glass lasers”, Conference on Optical Fiber Communications (OFC) 2005, Anaheim (CA), talk OFE 6.
115. H. J. Unold, D. Lorenser, D. J. H. C. Maas, A. Aschwanden, R. Grange, R. Paschotta, U. Keller, E. Gini, and D. Ebling, “Towards wafer-scale integration of high-repetition-rate passively mode-locked surface-emitting semiconductor lasers”, Conference on Lasers and Electro-Optics 2005, Baltimore (Maryland), May 2005, talk CWI7.
116. R. Grange, M. Haiml, R. Paschotta, G. J. Spühler, L. Krainer, U. Keller, and O. Ostinelli, “Novel inverse saturable absorption for improved passive mode locking”, Conference on Lasers and Electro-Optics 2005, Baltimore (Maryland), May 2005, talk CFB5.
117. L. Krainer, G. J. Spühler, V. Liverini, S. Schön, R. Grange, M. Haiml, A. Schlatter, R. Paschotta, and U. Keller, “Passively mode-locked multi-GHz 1.3-µm Nd:vanadate lasers with low timing jitter”, Conference on Lasers and Electro-Optics 2005, Baltimore (Maryland), May 2005, talk CThN1.
118. A. Schlatter, B. Rudin, S. C. Zeller, R. Paschotta, G. J. Spühler, L. Krainer, U. Keller, N. Haverkamp, and H. R. Telle, “Nearly quantum noise limited timing jitter from miniature Er:Yb:glass Lasers”, CLEO/Europe 2005 in Munich, talk CF4-2-THU.
119. S. V. Marchese, E. Innerhofer, R. Paschotta, U. Keller, S. Kurimura, and K. Kitamura, “Room temperature high power femtosecond optical parametric generator based on MgO-doped stoichiometric $LiTaO_3$”, CLEO/Europe 2005 in Munich, talk CD3-3-WED.
120. A. Gosteva, M. Haiml, R. Paschotta, and U. Keller, “Noise as a resolution limiting factor in group delay dispersion measurements with spectrally integrated white light interferometers”, CLEO/Europe 2005 in Munich, talk CF5-6-FRI.
121. S. C. Zeller, G. J. Spühler, L. Krainer, R. Paschotta, U. Keller, and K. P. Hansen, “Frequency comb generation with 50-GHz channel spacing in the telecom C-band”, CLEO/Europe 2005 in Munich, talk CD5-2-THU.
122. R. Paschotta, A. Gosteva, U. Keller, and J. M. Dudley, “Noise in carrier-envelope offset frequency signals obtained from supercontinua”, CLEO/Europe 2005 in Munich, talk CF6-3-FRI.
123. R. Paschotta, “Explanation for beam quality deterioration of lasers for operation near frequency degeneracy of transverse cavity modes”, Advanced Solid-State Photonics 2006 in Lake Tahoe, poster TuB18
124. R. Paschotta, “Novel guidelines for the optimization of laser beam quality”, EPS Europhoton Conference 2006 in Pisa (Italy), talk FrB2
125. R. Paschotta, “Power scalability as a precise concept for the evaluation of laser architectures”, CLEO/Europe 2007 in Munich, talk CA3-2-MON, June 18, 2007
126. R. Paschotta, O. Prochnow, D. Wandt, U. Morgner, and D. Kracht, “Timing jitter of mode-locked fiber lasers”, Advanced Solid-State Photonics 2009 in Denver, poster MB16
127. O. Prochnow, R. Paschotta, E. Benkler, U. Morgner, D. Wandt, D. Kracht, and J. Neumann, “Quantum-limited noise performance of an ultrafast Yb all-fiber laser”, talk CF2.4 WED at CLEO/Europe in Munich, June 17, 2009

128. R. Paschotta, “Timing jitter of mode-locked fiber lasers”, paper 7721A-8 at SPIE Photonic Europe, April 12, 2010

Books

1. R. Paschotta, “Field Guide to Lasers”, SPIE Press, Bellingham (WA) (2007)
2. R. Paschotta, “Encyclopedia of Laser Physics and Technology”, Wiley-VCH, Weinheim, Germany (2008)
3. R. Paschotta, “Field Guide to Laser Pulse Generation”, SPIE Press, Bellingham (WA) (2008)
4. R. Paschotta, “Field Guide to Optical Fiber Technology”, SPIE Press, Bellingham (WA) (2010)

Book Chapters

1. R. Paschotta and U. Keller, “Ultrafast solid-state lasers”, chapter in “Ultrafast Lasers: Technology and Applications”, Marcel Dekker, Inc., New York, 2003. ISBN: 0-8247-0841-5.
2. G. J. Spühler, L. Krainer, S. Lecomte, S. C. Zeller, K. J. Weingarten, R. Paschotta, and U. Keller, “Novel 10- to 40-GHz telecom pulse generating sources with high average power”, in Ultrafast Optics IV, Springer Series in Optical Sciences Vol. 95, Springer, ISBN: 0-387-40091-5
3. D. Müller, A. Giesen, R. Paschotta, and U. Keller, “Ultrashort pulse thin-disk lasers and amplifiers”, chapter in “Femtosecond technology for technical and medical applications”, Springer Series “Topics in Applied Physics”, Vol. 96, Springer, 2004, ISBN: 3-540-20114-9.
4. R. Paschotta and U. Keller, “Passively mode-locked solid-state lasers”, chapter 7 in “Solid-State Lasers and Applications”, editor: Alphan Sennaroglu, CRC Press, Taylor and Francis Group, LLC, pp. 473–510, 2007, ISBN 0-8493-3589-2.
5. R. Paschotta, H. R. Telle, and U. Keller, “Noise of Solid State Lasers”, chapter 12 in “Solid-State Lasers and Applications”, editor: Alphan Sennaroglu, CRC Press, Taylor and Francis Group, LLC, pp. 473–510, 2007, ISBN 0-8493-3589-2.
6. R. Paschotta, “Operation regimes of solid-state lasers”, chapter in “Handbook of solid-state lasers: Materials, systems and applications”, editors: B. Denker, and E. Shklovsky, Woodhead Publishing, 2013, ISBN 0 85709 272 3

Various Publications

1. R. Paschotta, L. Krainer, and U. Keller, “Extreme photonics: repetition rates”, Photonics Spectra, Feb. 2000, p. 106.
2. R. Paschotta and U. Keller, “Ever higher powers from mode-locked lasers”, Optics & Photonics News **14** (5), May 2003, p. 50.
3. L. Krainer, G. J. Spühler, K. J. Weingarten, I. Kilburn, S. C. Zeller, R. Paschotta, and U. Keller, “Novel high repetition rate solid-state lasers with low timing jitter”, IEEE LEOS Newsletter, Oct. 2003, p. 17.
4. E. Innerhofer, F. Brunner, S. V. Marchese, R. Paschotta, and U. Keller, “RGB source powers up laser projection displays”, Photonics Spectra 06/2004.
5. R. Paschotta, “Understanding noise in optical sources is critical”, Europhotonics Aug./Sept. 2005, p. 34.
6. R. Paschotta, “Intensive Lichtpulse nach Maß”, Laser + Photonik 5 / 2005, p. 14.

7. R. Paschotta, “Ultrakurzpuls-Festkörperlaser – eine vielfältige Familie”, Photonik 1 / 2006, p. 70
8. R. Paschotta, “Frequenzkämme und optische Frequenzmetrologie”, Photonik 3 / 2006, p. 60
9. R. Paschotta, “Leistungsskalierung von Lasern”, Laser Technik Journal September 2006 (4), p. 46
10. R. Paschotta, “Laserentwicklung mit Methode”, Photonik 6 / 2006, p. 66
11. R. Paschotta, "Resonatordesign – unterschätztes Potenzial für bessere Laser", Laser Technik Journal 4 (4), p. 50 (2007)
12. R. Paschotta, “Laser sources for ultrashort pulses”, Laser Technik Journal 4 (1), p. 49 (2007)
13. R. Paschotta, “Solid state lasers for ultrashort pulses – a diverse family”, Photonik international 2007
14. R. Paschotta, “Resonatordesign – unterschätztes Potenzial für bessere Laser”, Laser Technik Journal 4 (4), p. 50 (2007)
15. R. Paschotta, “Optical fiber technology“, Optik & Photonik 6/2008, p. 52 (2008)
16. R. Paschotta, “Fiber amplifiers – part 1: a technology with many applications”, Laser Technik Journal 6 (5), 48 (2009)
17. R. Paschotta, “Fiber amplifiers – part 2: a technology with many applications”, Laser Technik Journal 6 (6), 51 (2009)
18. R. Paschotta, “Fiber amplifiers – part 3: a technology with many applications”, Laser Technik Journal 7 (1), 48 (2010)
19. R. Paschotta, “Noise in laser technology, part 1: intensity and phase noise”, Optik & Photonik 2, 48 (2009)
20. R. Paschotta, “Noise in laser technology, part 2: fluctuations in pulsed lasers”, Optik & Photonik 3, 45 (2009)
21. R. Paschotta, “Noise in laser technology, part 3: beam pointing fluctuations”, Optik & Photonik 4, 55 (2009)
22. R. Paschotta, “Laserpointer – wirklich harmlos?”, World of Photonics newsletter 13/2009
23. R. Paschotta, “Optical frequency combs forge precise optical clocks and more”, Laser Focus World Jan. 2011, 86
24. R. Paschotta, “Understanding fiber amplifiers and Lasers”, Laser Technik Journal 09/2011, S. 45 (2011)
25. R. Paschotta, “Modeling improves fiber amplifiers and lasers”, Photonics Spectra 06/2012, p. 54 (2012)
26. R. Paschotta, “Laser gain media: a diverse family of materials”, Photonics Specctra 05/2013, p. 57 (2013)
27. R. Paschotta, “Ultrafast Laser Systems: Fiber or Bulk Solutions?”, Laser Technik Journal 10 (3), 51 (2013)
28. R. Paschotta, „Designing fiber amplifiers for short and ultrashort pulses“, Photonics Spectra 12/2013, p. 39 (2013)
29. R. Paschotta, „How optical fibers really work“, Photonics Spectra 02/2014, p. 50 (2014)

Theses

1. R. Paschotta, “Erzeugung nichtklassischer Lichtzustände”, diploma thesis, Universität Konstanz (1991).
2. R. Paschotta, “Einfach- und doppeltresonante monolithische Frequenzverdoppler für Experimente in der Quantenoptik”, Ph.D. thesis, Universität Konstanz (1994).
3. R. Paschotta, “Ultrafast Solid-State Lasers“, Habilitationsschrift, ETH Zürich, Oct. 2001.

Patents

1. S. Schiller, G. Breitenbach, R. Paschotta, and J. Mlynek, “Subharmonisch gepumpter optischer parametrischer Oszillator”, Gebrauchsmuster #295 12 450.4, Deutsches Patentamt, Karlsruhe, 1995.
2. J. Nilsson, D. C. Hanna, J. D. Minelly, and R. Paschotta, “Optical amplifier and light source”, US patent 6’288’835 (2001).
3. J. Nilsson, D. C. Hanna, J. D. Minelly, and R. Paschotta, “Optical amplifier and light source”, US patent 6’445’494 (2002).
4. R. Paschotta, J. Aus der Au, G. J. Spühler, and U. Keller, “Passively mode-locked thin-disk laser”, US patent 6,834,064 (2004).
5. R. Paschotta, R. Häring, and U. Keller, “Passively mode-locked optically pumped semiconductor external-cavity surface-emitting laser”, US patent 6,735,234 (2004).
6. G. J. Spühler, L. Krainer, K. J. Weingarten, R. Paschotta, and U. Keller, “Pulse-generating laser”, US patent 6,778,565 (2004).
7. I. A. Young, U. Keller, H. Unold, R. Paschotta, and S. Schön, “Surface emitting laser with an integrated absorber”, US patent 7,729,393 (2010).

Supervision of Ph. D. Work

The following Ph. D. students have acquired their Ph. D. partially or (in most cases) completely with supervision by R. Paschotta. The list contains the names and the titles and years of the Ph. D. theses.

1. Clemens Hönninger, “Ultrafast ytterbium-doped bulk lasers and laser amplifiers”, 1999
2. Jürg Aus der Au, “Towards high-power diode-pumped femtosecond all-solid-state lasers”, 2001
3. Gabriel J. Spühler, “Compact ultrafast solid-state lasers”, 2001
4. Reto Häring, “Miniature pulsed laser sources: kilohertz to gigahertz”, 2001
5. Lukas Krainer, “High repetition rate solid-state lasers”, 2002
6. Thomas Südmeyer, “Novel ultrafast nonlinear devices pumped with high power passively mode-locked lasers”, 2003
7. Felix Brunner, “High power femtosecond lasers and their application to nonlinear optics”, 2004
8. Alex Aschwanden, “High peak power passively mode-locked VECSELs”, 2004
9. Steve Lecomte, “Diode-pumped solid-state lasers and optical parametric oscillators with GHz pulse repetition rates”, 2005
10. Edith Innerhofer, “High average power Yb:YAG thin disk laser and its application for an RGB laser source”, 2005
11. Dirk Lorenser, “Picosecond VECSELs with repetition rates up to 50 GHz”, 2005

12. Sergio Marchese, “Towards high field physics with high power thin disk laser oscillators”, 2008

Teaching Activities

1. Postgraduate lecture course on photodetection, Southampton University, Nov. 1995.
2. “Introduction to fiber lasers and upconversion lasers”: three lectures at the Winter College on New Laser Sources, Trieste, Feb. 1996.
3. Various tutorials for physics courses at ETH Zürich since 1998 (Physics I and II, Quantum Electronics, Ultrafast Laser Physics): working out the exercises, instructing the assistants, administrative coordination.
4. Occasional lecturing in physics courses at ETH Zürich in substitution of Prof. Ursula Keller (Physics II, Quantum Electronics, Ultrafast Laser Physics, between 2000 and 2004).
5. Lecture series on “Ultrafast Laser Physics”, ETH Zürich, April-July 2002, done together with G. Steinmeyer.
6. Lecture series on “Ultrafast Laser Physics”, ETH Zürich, April-July 2003.
7. Lecture series on “Ultrafast Laser Physics”, ETH Zürich, April-July 2004.
8. Supervision of Ph. D. students, diploma students, and semester students. Eleven students of ETH Zürich have obtained their Ph. D. with work under the direct supervision of Dr. Paschotta (see the list of Ph. D. theses above), who has also given detailed internal tutorials on laser gain media, photodetection with photodiodes, nonlinearities in fibers, supercontinuum generation in fibers, mode-locked fiber lasers, laser noise, etc.
9. Lectures on mode-locked solid state lasers and semiconductor lasers at the 3rd International Summer School "New Frontiers in Optical Technologies" in Tampere, Finland, August 15-20, 2005.
10. Short course SC256, “Lasers for Ultrashort Pulse Generation”, at Advanced Solid State Photonics 2006, Lake Tahoe, Nevada, January 2006.
11. “Introduction to laser diodes, beam quality of lasers and nonlinear frequency conversion for generation of visible laser radiation”, lecture at the Workshop on Novel Laser Technologies and Their Applications in Tampere, Finland, August 31, 2006.
12. Short course SC818 on “Laser beam quality” at Photonics West 2007, Jan. 22.
13. Lectures on “Fundamentals of fiber lasers and amplifiers” and “Ultrashort pulse fiber sources” at the Winter College on Fibre Optics, Fibre Lasers and Sensors, Feb. 12, 2007, Trieste, Italy
14. Lectures on “Introduction to Amplifiers” and on “Power Scaling of Lasers” at the 4th International Summer School "New Frontiers in Optical Technologies" in Tampere, Finland, August 13-17, 2007.
15. Short course SC818 on “Laser beam quality” at Photonics West 2008, Jan. 22.
16. Short course SC860 on “Resonator design for solid state lasers” at Photonics West 2008, Jan. 23.
17. Short course SC818 on “Laser beam quality” at Photonics West 2009, Jan. 25.
18. Short course SC931 on “Applied nonlinear frequency conversion” at Photonics West 2009, Jan. 27.
19. Short course SC860 on “Resonator design for solid state lasers” at Photonics West 2009, Jan. 28.
20. Short course on “Fiber amplifiers” at CLEO/Europe 2009 in Munich, June 14.

21. Lecture on “Fiber Amplifiers and Lasers” at the 5th International Summer School "New Frontiers in Optical Technologies" in Tampere, Finland, August 10, 2009.
22. Short course SC931 on “Applied Nonlinear Frequency Conversion” at Photonics West in San Francisco, Jan. 25, 2010
23. Short course SC 818 on “Laser Beam Quality” at Photonics West in San Francisco, Jan. 26, 2010
24. Short course SC860 on “Resonator Design for Solid State Lasers” at Photonics West in San Francisco, Jan. 27, 2010
25. Short course on “High-Power Solid-State Laser Technologies” at Advanced Solid-State Photonics 2010 in San Diego on January 31, 2010
26. Short course SC931 on “Applied Nonlinear Frequency Conversion” at Photonics West in San Francisco, Jan. 24, 2011
27. Short course SC 818 on “Laser Beam Quality” at Photonics West in San Francisco, Jan. 25, 2011
28. Short course SC860 on “Resonator Design for Solid State Lasers” at Photonics West in San Francisco, Jan. 25, 2011
29. Tutorial on “Nonlinear Frequency Conversion” at the 6th International Summer School "New Frontiers in Optical Technologies" in Tampere, Finland, August 8, 2011.
30. Short course SC 818 on “Laser Beam Quality” at Photonics West in San Francisco, Jan. 22, 2012
31. Short course SC931 on “Applied Nonlinear Frequency Conversion” at Photonics West in San Francisco, Jan. 23, 2012
32. Short course SC860 on “Resonator Design for Solid State Lasers” at Photonics West in San Francisco, Jan. 25, 2012
33. Short course SC380 on “Laser Noise” at ASSP in San Diego, Jan. 29, 2012
34. Short course SC860 on “Resonator Design for Solid State Lasers” at Photonics West in San Francisco, Feb. 3, 2013
35. Short course SC 818 on “Laser Beam Quality” at Photonics West in San Francisco, Feb. 5, 2013
36. Lecture on “Numerical Modeling of High-Power Bulk and Fiber Lasers” at the WE-Heraeus-Seminar in Bad Honnef, July 15, 2013
37. Short course SC860 on “Resonator Design for Solid State Lasers” at Photonics West in San Francisco, Feb. 2, 2014
38. Short course SC931 on “Applied Nonlinear Frequency Conversion” at Photonics West in San Francisco, Feb. 3, 2014
39. Short course SC 818 on “Laser Beam Quality” at Photonics West in San Francisco, Feb. 5, 2014
40. Short course SC 818 on “Laser Beam Quality” at Photonics West in San Francisco, Feb. 8, 2015
41. Short course SC931 on “Applied Nonlinear Frequency Conversion” at Photonics West in San Francisco, Feb. 9, 2015
42. Short course SC1181 on “Ultrafast Lasers and Amplifiers” at Photonics West in San Francisco, Feb. 17, 2016

43. Short course SC1180 on “Passive and Active Fiber Optics” at Photonics West in San Francisco, Feb. 14, 2016
44. Short course SC1181 on “Ultrafast Lasers and Amplifiers” at Photonics West in San Francisco, Jan. 29, 2017
45. Short course SC1207 on “High Power Laser Technologies” at Photonics West in San Francisco, Feb. 2, 2017

Various Commitments

- Serving as a referee for scientific journals like Optics Letters, Physical Review Letters, Physical Review A and E, Journal of the Optical Society of America B, Applied Optics, Applied Physics B, Optics Communications, Journal of Lightwave Technology, IEEE Journal Quantum Electronics, and IEEE Photonics Technology Letters. So far, over 250 referee reports have been delivered.
- Serving as a member of a programme subcommittee for CLEO/Europe 2000 in Nice, France.
- Serving as a member of the programme committee for the “Symposium on Microlasers” at the CLEO/Europe topical meeting 2003 in München, Germany.
- Serving as a member of the programme subcommittee “Solid-State Lasers” for the EPS Europhoton Conference on “Solid-State and Fiber Coherent Light Sources” 2004 in Lausanne, Switzerland.
- Serving as subcommittee chair (topical area solid-state lasers) for CLEO/Europe 2005 in Munich, Germany.
- Serving as a member of a programme subcommittee for CLEO 2005 in Baltimore and CLEO 2006 in Long Beach (CA), USA.
- Serving as a programme committee member of Advanced Solid-State Photonics 2006 (Lake Tahoe) and 2007 (Vancouver).
- Serving as a programme committee member of the 2nd EPS Europhoton Conference on “Solid-State and Fiber Coherent Light Sources”, Sept. 10–15, 2006.
- Serving as a member of the programme committee “Solid-State Lasers” at the CLEO/Europe topical meetings 2007, 2009 and 2011 in München, Germany.

Overview on Scientific Achievements

An overview on the scientific achievements of Dr. Rüdiger Paschotta is available online:
see https://www.rp-photonics.com/Science_Paschotta.ppt

RP Photonics Consulting GmbH

In June 2004, Dr. Rüdiger Paschotta has founded the company RP Photonics Consulting GmbH in order to offer consulting services for the photonics industry. More specifically, various kinds of services (including product designs, problem solving, staff training, and independent assessments) are available for manufacturers and users of lasers and other modern optical equipment, for investors and funding agencies, and for communications and advertising experts. The covered topical areas are: lasers and amplifiers, nonlinear optics, fiber optics, ultrashort pulses, multilayer optics, fluctuations and noise. For details see the company website https://www.rp-photonics.com/.

Encyclopedia of Laser Physics and Technology

Since September 2004, Dr. Rüdiger Paschotta has his "Encyclopedia of laser physics and technology" freely accessible under https://www.rp-photonics.com/encyclopedia.html. This work is also a part of the WWW Virtual Library. The covered topics include not only laser physics and laser technology, but also general optics and optoelectronics, nonlinear optics, quantum optics, fiber optics, ultrashort pulses, and optical communications. The encyclopedia contains over 600 technical articles. Being extensively used both by the laser industry and by researchers, the encyclopedia typically receives well over 150'000 page views monthly, and has around 3000 to 4000 visitors on a working day. In October 2008, this encyclopedia appeared as a two-volume print version, published via Wiley-VCH.

Since July 2006, there is also a blog called "The Photonics Spotlight" (https://www.rp-photonics.com/spotlight.html). In 2012, this already contained around 200 articles.

RP Photonics Buyer's Guide

Since August 2012, the "RP Photonics Buyer's Guide" has been introduced on the RP Photonics website (https://www.rp-photonics.com/buyersguide.html). This comprehensive database of suppliers in the photonics sector is intimately connected with the Encyclopedia of Laser Physics and Technology. This resource strongly benefits from Dr. Paschotta's knowledge on products and companies in the field of photonics.

An Encyclopedia on Energy Topics: RP-Energie-Lexikon

In 2010, Dr. Paschotta started to work on another encyclopedia, this time on the area of energy generation and consumption, and in German. It is named the "RP-Energie-Lexikon", and is freely available in the Internet at https://www.energie-lexikon.info/. The main intention behind this project is to provide the public with a reliable source of information on energy matters, not only listing facts on certain technologies but also presenting their merits and limitations in a balanced and fair way. In 2016, that resource already contained well over 600 articles. Dr. Paschotta also offers consultancy in the area of energy technologies.